



International Journal of Research in Education and Science (IJRES)

Online Video Games and Young People

Maja Ružić-Baf¹, Hrvoje Strnak², Andrea Debeljuh³

¹ University of Pula, Croatia, mruzic@unipu.hr

² University of Pula, Croatia, hstrnak@unipu.hr

³ University of Pula, Croatia, adebeljuh@unipu.hr

www.ijres.net

To cite this article:

Ruzic-Baf, M., Strnak, H., & Debeljuh, A. (2016). Online video games and young people. *International Journal of Research in Education and Science*, 2(1), 94-103.

This article may be used for research, teaching, and private study purposes.

Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

Authors alone are responsible for the contents of their articles. The journal owns the copyright of the articles.

The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of the research material.

Online Video Games and Young People

Maja Ružić-Baf^{1*}, Hrvoje Strnak², Andrea Debeljuh³

University of Pula, Croatia

Abstract

The availability of new information and communication technologies to an increasingly younger population, the constant availability of the Internet and the opportunity to search information, to create new types and models of communication, types of acceptance and ways of accepting and coping with the infinite amount of information, the velocity and choice of well-designed marketing products, especially video games, in particular in the last decade, caused a real "gaming boom" among almost all age groups. Addictions are a well-known problem of the human kind, and they are as well a challenge for professionals and scientists from different fields of interest. Considering the large amount of addictions, one of the new types is the addiction to videogames affecting a younger and younger population. Smartphones and tablets are available to a growing number of children and youngsters. It is almost incomprehensible and "unacceptable" that a child in the first grade of primary school does not have its own mobile phone, PDA, game console, laptop, desktop or similar. By playing video games for several hours a day, either at school, during school hours or after, they enter a world exit from which sometimes requires seeking the help of experts. Are we facilitating the creation of new types of addictions among the new generation of youngsters? In the paper we present the results of the research conducted with children of the seventh and eighth grades of the primary schools of Pula on the time they spend playing online videogames during and after the lessons, on playing videogames to get to know new people, for fun, to be part of a clan, not performing daily activities to play online videogames, their sleeping problems and other things.

Key words: ICT; Online videogames; Addiction

Introduction

The videogame industry growth is accelerating. Videogames are becoming a serious challenge to companies and experts and the videogames market is growing rapidly. Some videogames have become so realistic and can emulate the outer, real life in such a realistic manner as to "urge" users to spend their free time, and often a large part of time in general, in virtual space. Playing videogames on various game consoles, computers, tablets and smartphones has been present in our culture for about twenty years. Even though video game addiction has not entered the internationally recognized standard diagnostic tool ICD-10, nor can it be found under the diagnostic criteria of the DSM-IV manual, it does nevertheless show symptoms similar to those with other behavioural addictions. As with the majority of other addictions, video gaming (znano.st, 2013) releases an increased level of dopamine and glutamate in the brain, which brings pleasure and, consequently, gives an impetus for further playing of videogames and video game addiction. Apart from the chemical component, there is also a psychological component of addiction, with video game addicts showing similar behaviours to those of other addicts.

Video game addiction has reached worldwide proportions. Authors Gentile, Choo, Liau, Sim, Fung, Khoo et al. (2011) say that online video gaming, a poor-level social competence and gamers' impulsiveness are some of the possible factors which may lead to a risk of developing pathologic video game addiction. A video gamer addict on average spends 31 hours a week playing video games. Adolescents addicted to video games (Gaetan, Bonnet, Pedinelli, 2012) are satisfied with their real life to a less extent. When compared with their peers, they seem to be happier in the virtual life, which is, at the same time, one of the indicators of video game addiction. Video game addiction, particularly Massively Multiplayer Online Role-Playing Games (MMORPG) has become so widespread among Korean teenagers (Pyoung Won Kim, Seo Young Kim, Miseon Shim, Chang-Hwan Im, Young-Min Shon, 2013) that the Government imposed a ban on playing MMORPGs after midnight. This is, in our opinion, a way to try to prevent the addiction, but it is not the best one. The prevention has to be done by the introduction of educational activities aimed at sensibilizing both the parents and the children. Also, the school system there should provide more space for discussing this risk. Aggressiveness, self-control, narcissistic

* Corresponding Author: *Maja Ružić-Baf*, mrusic@unipu.hr

personality traits (Kim, Namkoong, Ku, Kim, 2008) may predispose some individuals to become addicted to online games. Correlational analyses indicate that low levels of functional impulsivity and agreeableness alongside high levels of verbal aggression and video game dependency are associated with greater amount of time spent playing MMORPGs (Collins, Freeman, Chamaro-Premuzic, 2012).

Video game addiction is still not perceived by the public as something really happening among the young people. Video gaming, which started as occasional entertainment, can soon translate into everyday habit, and habit can soon escalate into addiction (www.novapsihologija.com/ovisnost-o-videoigrama). When does entertainment become a problem? Video game addiction has been recognized by many experts. There are numerous clinics to treat and prevent video game addiction in China, the Netherlands and Korea. In a research (Hellström, Nilsson, Leppert, Lslund, 2012) that comprised 7757 Swedish adolescents (aged 13 to 18), aimed at studying the influences of time spent gaming and motives to play on the negative consequences of adolescent online computer gaming, the majority of adolescents who played MMORPGs confirmed to have experienced negative consequences of gaming. These negative consequences comprised: poor sleep quality, lack of time to do school assignments, often quarrelling with parents (especially girls). Boys mentioned lack of time to spend with friends, staying home to play games, lack of time to do school assignments. The girls often forgot to eat and had less sleep.

As a consequence of the "surplus" or "poor organisation" of leisure time, young people spend more and more time playing video games. The roles of parents and teachers in the prevention of video game addiction have become the subjects of studies of numerous scientists. One of the primary keys can certainly be found in the family. Numerous studies, for various types of addictions, have pointed out family as one of the key sources of both emergence of and solution to the problem of addiction. What is so important in the family environment? First of all, it is the context or the environment where abilities of the child to function in a quality way in the world are developed. Upbringing is, therefore, one of the crucial impacts on the learning of self-control, taking good and responsible life decisions and being able to foresee negative outcomes (Sakoman, 2009). Apart from the family, pre-school and school teachers and every other person included in the education process should become involved in order to prevent a possible addiction (addiction prevention) and/or to, at least, recognize the first signs of its emergence.

Research Objective and Working Methods

Considering that playing video games, online gaming in particular, has become widespread among the younger population, the question now is to what extent. This research tried to answer the questions about the time spent by the respondents' video gaming, point of access to video games, money spent on video gaming, reasons for gaming and impact on their behaviour. The sample comprised 123 students of the seventh and eighth grades of the primary schools of Pula. Respondents were distributed with regards to their sex (72 M and 51 F). A questionnaire consisting of 21 variables was implemented:

1. How often do you play online video games? (CESTO_IG)
2. How much time a day do you spend playing online video games? (DNEVNO_IG)
3. What time of the day do you play online video games most often? (DOBA_DN)
4. I mostly access online video games from (PRIST_IG)
5. Are you member of a group (clan) of gamers within Croatia? (CLAN_UHR)
6. Are you member of a group (clan) of gamers outside Croatia? (CLAN_IHR)
7. Do you consider yourself to be an important link of your clan? (CLAN_VZN)
8. What do you buy most often? (NAJ_KUP)
9. I play online video games for fun (IGR_ZAB)
10. I play online video games out of boredom (IGR_DOS)
11. I play online video games because all my friends play them (IG_PRI)
12. I play online video games to make new acquaintances (IG_NPOZ)
13. I play online video games because I cannot stand even one day without playing (IG_1DBN)
14. I sometimes play online video games during classes (lectures) (TNAS_IG)
15. Because an online video game has to be played at a definite time I sometimes absent from classes (lecture) (IZ_SNAŠT)
16. Upon a request of the team to play a video game, I cancel all my appointments (NAP_AKT)
17. Playing online video games is a means of escape from the real world (IG_BRSL)
18. Playing online video games makes me feel part of a team (IG_DIOT)
19. Playing online video games disturbs my sleep (NIG_LSP)

20. Playing is a means of escape from the real world problems (IG_BPUZ)
 21. I want to, but I do not know how to stop playing (NEZ_STOP)

Results

Table 1 shows frequency of online video game playing by the respondents. The first group (male students) has 38.9% respondents playing video games every day, while in the second group (female students) 13.7% play video games every day. The calculated value of the χ^2 test (Chi square=27.883 (df=4), $p=0.001$) is larger than the limit value at degree of freedom 4. The results can therefore be considered statistically significant.

Table 1. Playing online video games

Gender	Never	Up To 5 Times Per Month	2-3 Days Per Week	4-6 Days Per Week	Every Day	Total
Male	8	10	13	13	28	72
	11.1%	13.9%	18.1%	18.1%	38.9%	100.0%
Female	8	28	4	4	7	51
	15.7%	54.9%	7.8%	7.8%	13.7%	100.0%
Total	16	38	17	17	35	123
	13.0%	30.0%	13.8%	13.8%	28.5%	100.0%

Table 2 shows the time spent by the respondents every day playing online video games. A total of 41.7% male students and 66.7% female students spend up to 1 hour a day playing online video games, while 33.3% male students play video games two to three hours a day. The calculated value of the χ^2 test (Chi square=14.773 (df=4), $p=0.001$). The results can be considered statistically significant.

Table 2. Time spent online gaming

Gender	I Don't Play	1 Hour	2-3 Hours	4-6 Hours	More Than 6 Hours	Total
Male	8	30	24	8	2	72
	11.1%	41.7%	33.3%	11.1%	2.8%	100.0%
Female	9	34	4	4	0	51
	17.6%	66.7%	7.8%	7.8%	0.0%	100.0%
Total	17	64	28	12	2	123
	13.8%	52.0%	22.8%	9.8%	1.6%	100.0%

Table 3 shows data on time of day when respondents play online video games mostly. Respondents of both groups mostly play video games in the afternoon, 44.4% of male and 47.1% of female students; 37.5% of male students play video games in the evening. The calculated value of the Chi square value =2.046 (df=4), $p=0.80$. This data can be considered statistically significant.

Table 3. Time of day spent on online gaming

Gender	None	In The Morning	In The Afternoon	In The Evening	During Night	Total
Male	8	1	32	27	4	72
	11.1%	1.4%	44.4%	37.5%	5.6%	100.0%
Female	8	2	24	15	2	51
	15.7%	3.9%	47.1%	29.4%	3.9%	100.0%
Total	16	3	56	42	6	123
	13.0%	2.4%	45.5%	34.1%	14.9%	100.0%

Table 4 presents points of access to online videogames. Respondents of both groups access video games mostly from home, 83.3% of male and 74.5% of female students. It can be concluded that respondents still follow the classes, at least when it comes to playing video games, since only 1.4% of male and 3.9 of female students access online video games from school. On the other hand, we can also conclude that the majority of children

have access to online videogames at home. That opens two scenarios: either parents approve the behaviour of their children or they are not aware of that behaviour. The value of the χ^2 test (Chi-square=1.737 (df₃), p= 0.50).

Table 4. Points of access to online videogames

Gender	None	From Home	From School	Other	Total
Male	8	60	1	3	72
	11.1%	83.3%	1.4%	4.2%	100.0%
Female	8	38	2	3	51
	15.7%	74.5%	3.9%	5.9%	100.0%
Total	16	98	3	6	123
	13.0%	79.7%	2.4%	4.9%	100.0%

Table 5 presents percentages of membership of clans (groups) in Croatia. The table clearly shows that the greatest percentage of male students (30.6%) are members of a group within Croatia. The value of the χ^2 test (Chi-square=16.057 (df=1), p=0.001) was larger than the limit value at degree of freedom 1 and this data can, therefore, be considered statistically significant.

Table 5. Membership in a clan (group) within Croatia

Gender	Yes	No	Total
Male	22	50	72
	30.6%	69.4%	100.0%
Female	1	50	51
	2.0%	98.0%	100.0%
Total	23	100	123
	18.7%	81.3%	100.0%

Table 6 explains whether respondents are members of certain groups (clans) outside Croatia. In total, 30.6% of male students are part of a clan. The value of the χ^2 test demonstrates that data contained in the table below is significant (Chi-square=13.484 (df1), p=0.001).

Table 6. Membership in a clan (group) outside Croatia

Gender	Yes	No	Total
Male	22	50	72
	30.6%	69.4%	100.0%
Female	2	49	51
	3.9%	96.1%	100.0%
Total	24	100	123
	19.5%	80.5%	100.0%

We can conclude that boys are more attracted by being members of a virtual group. Why there is such a big difference between boys and girls can be a matter for a future analysis. Table 7 explains whether respondents, members of a group (clan), consider themselves an important link within their group (their clan). 27.8% of the male students consider themselves to be an important link. The value of the χ^2 test demonstrates that data contained in the table below is significant (Chi-square=14.054 (df=1), p= 0.001).

Table 7. Respondents consider themselves important links of a group (clan)

Gender	Yes	No	Total
Male	20	52	72
	27.8%	72.2%	100.0%
Female	1	50	51
	2.0%	98.0%	100.0%
Total	21	102	123
	17.1%	82.9%	100.0%

Table 8 shows how many respondents use real money to purchase something in video games that enables them to move forward. The results reflect that the largest percentage in both groups of students (65.3% of male and 84.3% of female students) do not purchase anything and do not spend real money to make progress in a game. The result of χ^2 test is (Chi-square= 8.335 (df= 5), p= 0.1).

Table 8. What respondents buy most in online video games

Gender	Nothing	Levels	Gear/Items	Chips	Resources	Other	Total
Male	47 65.3%	3 4.2%	9 15.5%	3 4.2%	3 4.2%	7 9.7%	72 100.0%
Female	43 84.3%	3 5.9%	3 5.9%	0 0.0%	1 2.0%	1 2.0%	51 100.0%
Total	90 73.2%	6 4.9%	12 9.8%	3 2.4%	4 3.3%	8 6.5%	123 100.0%

Table 9 reflects the assertions of respondents on playing video games for fun. 47.2% of male and 27.5% of female students stated that this assertion always applies to them. These are, at the same time, also the largest percentages in both groups of respondents. The result of χ^2 test is (Chi-square= 5.937 (df=4), p= 0.2).

Table 9. Online gaming for fun

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	12 16.7%	3 4.2%	12 16.7%	11 15.3%	34 47.2%	72 100.0%
Female	9 17.6%	5 9.8%	11 21.6%	12 23.5%	14 27.5%	51 100.0%
Total	21 17.1%	8 6.5%	23 18.7%	23 18.7%	48 39.0%	123 100.0%

Table 10 reflects data indicating whether respondents play video games out of boredom. It can be inferred that this table supplements the results from the previous table and that the respondents mostly play online video games for fun. The greatest percentage in both groups of respondents (48.6% of male and 31.4% of female students) indicates that this assertion does not refer to them. The value of the χ^2 test is (Chi-square=7.423 (df=4), p= 0.01).

Table 10. Online gaming out of boredom

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	35 48.6%	14 19.4%	9 12.5%	7 9.7%	7 9.7%	72 100.0%
Female	16 31.4%	9 17.6%	16 31.4%	5 9.8%	5 9.8%	51 100.0%
Total	51 41.5%	23 18.7%	25 20.3%	12 9.8%	12 9.8%	123 100.0%

Table 11 presents the extent to which the assertion that respondents play online video games because their friends do so applies to the respondents. Even though the largest percentages given in this table for both groups (30.6% of male and 52.9% of female students) indicate that this assertion does not refer to them, the group of male students is much more easily influenced by their peers than the female group (need to prove oneself, feeling of equality, belonging, etc.). The value of the χ^2 test is (Chi-square=12.644 (df=4), p= 0.01).

Table 11. Assertion 3- Online gaming because of friends

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	22 30.6%	10 13.9%	18 25.0%	12 16.7%	10 13.9%	72 100.0%
Female	27 52.9%	12 23.5%	6 11.8%	3 5.9%	3 5.9%	51 100.0%
Total	49 39.8%	22 17.9%	24 19.5%	15 12.2%	13 10.6%	123 100.0%

Table 12 shows data referring to playing online video games and making new acquaintances. The assertion is not of great importance to either male or female students. The value of the χ^2 test is 18.149 (df=4, p=0.001).

Table 12. Online gaming to make new acquaintances

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	36 50.0%	11 15.3%	8 11.1%	11 15.3%	6 8.3%	72 100.0%
Female	42 82.4%	6 11.8%	3 5.9%	0 0.0%	0 0.0%	51 100.0%
Total	78 63.4%	17 13.8%	11 8.9%	11 8.9%	6 4.9%	123 100.0%

Table 13 gives the results showing the respondents' answers regarding the assertion that respondents play online video games as they cannot stand even one day without playing. Results are the approximately the same for both groups of respondents (79.2% of male and 84.3% of female students) saying that this assertion never applies to them. The value of the χ^2 test is (Chi-square= 5.445 (df=4), p= 0.2).

Table 13. Assertion 5 – I play online video games because I cannot stand even one day without playing

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	57 79.2%	10 13.9%	3 4.2%	0 0.0%	6 8.3%	72 100.0%
Female	43 84.3%	3 5.9%	4 7.8%	1 2.0%	0 0.0%	51 100.0%
Total	100 81.3%	13 10.6%	7 5.7%	1 0.8%	6 4.9%	123 100.0%

Table 14 presents the extent to which the assertion that respondents sometimes play online video games during classes. In both groups the largest percentage of respondents answered that the assertion does not apply to them. Nevertheless, it is worth noting, that a minor percentage of respondents coming from both groups play online video games during classes. The value of the χ^2 test is (Chi-square= 4.585 (df=4), p= 0.2).

Table 14. Online gaming during classes

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	57 79.2%	7 9.7%	3 4.2%	3 4.2%	2 2.8%	72 100.0%
Female	43 84.3%	6 11.8%	0 0.0%	0 0.0%	2 3.9%	51 100.0%
Total	100 81.3%	13 10.6%	3 2.4%	3 2.4%	4 3.3%	123 100.0%

Table 15 gives the values showing the respondents' answers regarding the assertion that video games are played at definite times and that respondents absent from classes because of that demand. The table demonstrates that respondents of both groups consider that gaming is not more important than classes (95.8% of male and 100% of female students). The value of the χ^2 test is (Chi-square=2.178 (df=3), $p=0.5$).

Table 15. Respondents absent from classes because of a demand to play an online video game at a definite time

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	69 95.8%	1 1.4%	1 1.4%	1 1.4%	0 0.0%	72 100.0%
Female	51 84.3%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	51 100.0%
Total	120 97.6%	1 0.8%	1 0.8%	1 0.8%	0 0.0%	123 100.0%

Table 16 presents the extent to which the assertion that respondents cancel all their agreed appointments because of a request of their teams. Respondents of both groups do not give precedence to online gaming over their obligations. However, more male students will abandon their activities to play online video games than female students. The value of the χ^2 test is (Chi-square=1.508 (df3), $p=0.5$).

Table 16. Upon a request of the team for online gaming, I cancel all my appointments

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	60 83.3%	6 8.3%	3 4.2%	3 4.2%	0 0.0%	72 100.0%
Female	46 90.2%	2 3.9%	2 3.9%	1 2.0%	0 0.0%	51 100.0%
Total	106 86.2%	8 6.5%	5 4.1%	4 3.3%	0 0.0%	123 100.0%

Table 17 presents the extent to which the assertion that respondents escape the real world by online gaming. The majority of the respondents declare that this assertion mostly does not apply to them. The value of the χ^2 test is larger than the limit value at degree of freedom 4. The results can therefore be considered statistically significant (Chi-square=1.887 (df=4), $p=0.8$).

Table 17. Online gaming is a means of escape from the real world

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	51 70.8%	14 19.4%	2 2.8%	2 2.8%	3 4.2%	72 100.0%
Female	33 64.7%	11 21.6%	4 7.8%	1 2.0%	2 3.9%	51 100.0%
Total	84 68.3%	25 20.3%	6 4.9%	3 2.4%	5 4.1%	123 100.0%

Table 18 presents the extent to which the assertion that online gaming makes respondents feel part of a team. Despite the fact that the largest percentage of respondents of both groups belongs to the first answer category, it can be inferred that more than a half of the first group (male students) play online video games precisely for the reason to feel part of a team. The value of the χ^2 test is larger than the limit value at degree of freedom 4. The results can therefore be considered statistically significant. Value of Chi-square test=14.235 (df=4), $p=0.01$).

Table 18. Assertion 10 - Online gaming makes me feel part of a team

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	29 40.3%	10 13.9%	15 20.8%	11 15.3%	7 9.7%	72 100.0%
Female	34 66.7%	10 19.6%	3 5.9%	2 3.9%	2 3.9%	51 100.0%
Total	63 51.2%	20 16.3%	18 14.6%	13 10.6%	9 7.3%	123 100.0%

Table 19 presents the extent to which the assertion that online gaming makes often disturbs respondents' sleep. The majority of the respondents declare that this assertion does not apply to them (83.3% of male and 90.2% of female students). The value of the χ^2 test is = 6.967, df=4, p= 0.1.

Table 19. Online gaming often disturbs sleep

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	60 83.3%	7 9.7%	1 1.4%	3 4.2%	1 1.4%	72 100.0%
Female	46 90.2%	1 2.0%	1 2.0%	0 0.0%	3 5.9%	51 100.0%
Total	106 86.2%	8 6.5%	2 1.6%	3 2.4%	4 3.3%	123 100.0%

Table 20 presents the extent to which the assertion that online gaming is a means of escape from the real world problems. The data presented in the table demonstrate that the majority of the respondents from both groups declare that this assertion does not apply to them (77.8% of male and 80.4% of female students). The value of the χ^2 test is = 2.312, df=4, p= 0.5.

Table 20. Online gaming is a means of escape from the real world problems

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	56 77.8%	5 6.9%	4 5.6%	5 6.9%	2 2.8%	72 100.0%
Female	41 80.4%	6 11.8%	1 2.0%	2 3.9%	1 2.0%	51 100.0%
Total	97 78.9%	11 8.9%	5 4.1%	7 5.7%	3 2.4%	123 100.0%

Table 21 presents the extent to which the assertion that respondents want to, but do not know how to stop playing online video games. As with previous assertions, the majority of the respondents declare that this assertion does not apply to them. However, a small percentage (2% of male, 1% of female students) of respondents declared that the assertion apply to them, which must not be neglected ($\chi^2=0.895$, df=4, p= 0.9).

Table 21. Willing, but unable to stop online gaming

Gender	Never Refers To Me	Rarely Refers To Me	Occasionally Refers To Me	Often Refers To Me	Always Refers To Me	Total
Male	59 81.9%	5 6.9%	5 6.9%	1 1.4%	2 2.8%	72 100.0%
Female	43 84.3%	4 7.8%	3 5.9%	0 0.0%	1 2.0%	51 100.0%
Total	102 82.9%	9 7.3%	8 6.5%	1 0.8%	3 2.4%	123 100.0%

Conclusion

Based on the obtained results it can be concluded that the male students are more prone to playing online video games than their female peers. The respondents play video games during the day, however only 5.6% of male and 3.9% of female student play online video games at night, which may indicate sleep deprivation, inability to attend classes on the following day, irritability, fatigue and similar. In order to gain membership to an online gaming group, respondents believe that they need to prove themselves since the majority of groups condition access on certain conditions such as spending a minimum of one hour per day online gaming, readiness to respond at a definite time etc. Once a respondent has become a member of a group, he will carry out tasks imposed on him by group leaders to advance in the team (hierarchy). 30.6% of male (m) and 2% of female respondents are members of a clan in Croatia, with 20% of male and 5% of female respondents are members of a clan outside Croatia.

The relevant difference in the number of boys and girls included in groups indicates that boys search social interaction in the virtual life more than girls. In order to advance in a particular video game it is sometimes required to spend money to purchase some equipment. A good indicator is that respondents, none the less, do not spend money on purchasing equipment or anything similar for the video game, despite the fact that 12.5% of the respondents did answer that they purchase equipment. The question remains whether parents know how their children spend their pocket money, how much money they spend on equipment and how often they do that. We cannot offer an answer to this question, but we consider that this should be matter for future research. Respondents answered the question why they play video games saying that they play video games primarily for fun. Some of them do it even during classes, which can point to a possible indifference to curriculum content, inability to attend classes (due to all-night gaming), boredom, request of the team to play at definite time or it can point to a possible addiction to video gaming. The use of smartphones to play online video games and any other form of class disruption should be precluded.

Even though the usage of smartphones and m-learning has entered teaching and it does have many advantages when used for learning, i.e. when it is implemented for teaching purposes, there is the other side of the coin which shows that the increasing frequency to use it for online gaming, searching information on the Internet, frequent downloading of numerous application and similar, spending more than three hours a day at smartphone and/or tablet/computer, could point to possible signs of addiction. Considering the amount of time young people spend interacting with their new "smart pets", including time during classes and breaks, free time, time before going to bed, in other words most of their time, a part of their time should be directed to activities which balance the activities of the left and the right hemispheres, spend more time in countryside and be included in sport teams.

We cannot change the progress of the world or the fact that the new generations, called digital natives (Prenski, 2001), have a different approach to technologies in general. However, on the other side, we cannot forget that the human being and our body are meant for moving and it is biologically structured for moving. The big change in our habits, introduced by the massive use of technologies has its risks. Risks have to be understood firstly by the parents and educators of all the school grades. We have to be aware that technology is an instrument that can be used in a variety of ways and, more important, that the choice is very often imposed. In the same way that we are doing our best as individuals and as society to keep our children away from drugs and gambling, we have to do our best to teach them the proper use of the ICT tools. In the first years this will mean to create the environment in which they can live (physical and virtual).

Precisely for the above-discussed reasons, it is of extreme importance to permanently educate parents, children and all people involved in the upbringing and education process, especially teachers, in order to enable them to prevent or at least recognize the first signs of a possible online gaming addiction. It is recommended that education be commenced as early as possible (when a child's interest for the usage of computers, smartphones and other devices is noted) both at home and at kindergarten. Early prevention and efficient education is one of the preconditions for a healthy growing up alongside new information and communication technology.

References

- Collins, E., Freeman, J., Chamaro-Premuzic, T. (2012). Personality traits associated with problematic and non-problematic massively multiplayer online role playing game use. *Personality and Individual Differences*, 52 (2), 133–138.

- Gaetan, S., Bonnet, A., Pedinielli, J.L. (2012). Self-perception and life satisfaction in video game addiction in young adolescents (11-14 years old). *Encephale-Revue De Psychiatrie Clinique Biologique Et Therapeutique*, 38 (6), 512-518.
- Gentile, D.A, Choo, H., Liau, A., LI, D., Fung, D., Khoo, A. (2011). Pathological Video Game Use Among Youths: A Two-Year Longitudinal Study. *Pediatrics*, 127 (1), 319-329.
- Hellström, C., Nilsson, K.W., Leppert, J., Lslund, C. (2012). Influences of motives to play and time spent gaming on the negative consequences of adolescent online computer gaming. *Computers in Human Behavior* 2012, 28(4), 1379-1387.
- Novapsihologija (2014). www.novapsihologija.com/ovisnost-o-videoigrama, consulted the 10.12.14.
- Prensky, M. (2001). Digital natives, digital immigrants part 1. On the horizon, 9(5), 1-6. (<http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf>, consulted the 10.12.14.)
- Pyoungh Won Kim, Seo Young Kim, Miseon Shim, Chang-Hwan Im, Young-Min Shon (2013).The influence of an educational course on language expression and treatment of gaming addiction for massive multiplayer online role-playing game (MMORPG) players. *Computers & Education*. 63, 208-217.
- Sakoman, S. (2009.). Školski programi prevencije ovisnosti. Zagreb: Agencija za odgoj i obrazovanje.
- Znano.st (2013) Koje video igre stvaraju najveću ovisnost i zašto. < <http://znano.st/drustvene-znanosti/9/koje-video-igre-stvaraju-najvecu-ovisnost-i-zasto/1123/>> . Consulted 5.11.2014.